

Work Order ID 99948

April-16-13 2:12:20 PM

\*99948\*

Page 1

Item ID: D4680-041

Accept

\*N9000040100\*

Setup Start

\*NS1\*

Revision ID:

Item Name: Skidtube Assembly

Stop

\*NS2\*

Start Date: 4/16/13 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 4/30/13 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: MLS

Date: 13-04-16 Tooling:

Date:

Run Start

\*NR1\*

QC:

Date: SPC (Y/N)

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D4680

A M

120

0.00

\*120\*

Skidtubes

Skidtubes

0.00

Skidtubes

Memo

1-Cut Aft end as per dwg D4680

2-Debur ends

3-Drill Aft & Fwd Cap holes using DT8678 & DT8901

4-Locate DT8870 & Drill Ground wire hole on top of Tube.

5-Locate DT8870 with #30 cleco in Ground wire hole, then Pilot Drill all X-Bolt holes using #30" drill. \*\*\*\*DO NOT OPEN AFT CAP HOLES\*\*\*\*

6-Open ground wire hole .297"

7-Open Aft & Fwd Cap holes using .208" drill.

8- Open X-Bolt holes to size as per Dwg D4680. and detail E

9-Bore out aft end of tube as per Dwg D4680.

10- Section G-G holes must be laid out manually, open to #30.

11-Debur holes.

DS/SAO/12  
13-5-22

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: AWZ Date: 13/6/10QA Closed: CX Date: 13/5/31

Work Order: <u>99948</u>	<b>DISPOSITION</b> Rework <input type="checkbox"/> Scrap <input checked="" type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>			
Part No. <u>D4680-041</u>		Skid-tube <input checked="" type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input checked="" type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>
NCR No. <u>13-2680</u>					

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input checked="" type="checkbox"/>	13.05.23	120	1	<b>DIMENSION 111.2 SHOULD BE 111.7</b>  2-c Drawn Error	A.P. 17.05.23	<b>SCRAP <del>RELEASE</del></b>  APPROX 1000 (FAT) <i>see from Linda</i>	<i>DC</i> 13/05/28	<i>13-5-28</i>	<i>S</i> 13/05/28
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

## FAULT CATEGORY

Landing Gear	General	
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Misabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

## Under Review Notification

**Raised By:** Alex Pharand

**Date:** 13.05.23

**Product #:** D117-762

**Product Name:** Skidtube

Drawing/Kit Number	Drawing/Kit Description	Quantity on Hand (Stock)	Quantity on Order (Production)	Quantity Allocated (Customer Order)	HOLD SHIPMENT	Red Tag/Quarantine Stock	Advise customers	Stop Production	Re-Work Stock	IPP Under Review	Blue File Under Review	ECN #	Instructions
D4680	Skidtube							X					scrap & replace affected parts
D4772	Wearplate Assy												Wrong part number called up on dwg
D4773	Wearplate Assy												Wrong part number called up on dwg

**Description of issue:**

Dimension 111.2 on dwg D4680 sheet 3 should be 111.7. The erroneous shorter length results in interference between the most forward D4753-1 Doubler and the forward cap through holes. Forward skidtube cap should be D2965-3. Continue production with new D4680 drawing at PB1.

D4772 & D4773 called up wrong part number, D4682-3 should be D4682-9, continue production with new D4772/D4773 drawings at Rev. PB1

**Distribution:**

General Manager  
Production Manager  
Director Quality Assurance  
Design Manager  
Chief Engineer

Production Engineering Coordinators  
Quality Assurance Coordinator  
Quality Control Coordinator  
Order Processing  
Customer Technical Support

Engineering Project Managers  
Engineering Clerk  
Marketing

April-16-13 2:12:20 PM

Page 2

Stop \*NR2\*

[illegible]

**Work Order ID 99948**

April-16-13 2:12:20 PM

**\*99948\***

Page 3

Item ID: D4680-041

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Skidtube Assembly

Start Date: 4/16/13 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 4/30/13 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

170

0.00

**\*170\***

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Drill Rivet Holes as per Dwg D4680 Using

2- Deburr Rivet holes.

3- Seal all faying surfaces using proseal and rivet Doubler as per Dwg D4680.

A/R Proseal Batch: \_\_\_\_\_

4- Deburr and blow out chips from inside of tube.

5- Bond web as per Dwg D4680 &amp; QSI 015

A/R 241 Sike Flex Batch: \_\_\_\_\_

Exp Date: \_\_\_\_\_

start time: \_\_\_\_\_

end time: \_\_\_\_\_

6- Swage x-bolt spacers as per Dwg D4680 and Detail C-C

7- Trim/Grind flush per QSI 002

# Work Order ID 99948

April-16-13 2:12:20 PM

**\*99948\***

Page 4

Item ID: D4680-041

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Skidtube Assembly

Start Date: 4/16/13 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 4/30/13 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: Date:

Tooling: Date:

Run Start **\*NR1\***

QC: Date:

SPC (Y/N): Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC5- Inspect part completeness to step on W/O	0.00							
<b>*180*</b>									
QC	Memo	0.00							
Quality Control									
210	Pressure Wash per QSI005 4.3	0.00							
<b>*210*</b>									
HandFinish	Memo	0.00							
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.								

April-16-13 2:12:20 PM

Page 5

Setup Start \*NS1\*

Stop \*NS2\*

**Customer:**

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

[illegible]

April-16-13 2:12:20 PM

Page 6

**Accept**

Setup Start \*NS1\*

Stop \*NS2\*

**Cust Item ID:**

**Start Date:** 4/16/13      **Start Qty:** 1.00

**\* 1 \***

**Customer:**

**Required Date:** 4/30/13      **Req'd Qty:** 1.00

\* 1 \*

**Reference:**

**Approvals:**                      **Process Plan:**

Date:

**Tooling:**

Date:

Run Start \*NR1\*

**QC:**

Date:

**SPC (Y/N):**

Date:

Stop \*NR2\*

[illegible]



April-16-13 2:12:20 PM

Page 7

**Accept**

Setup Start \*NS1\*

Stop \*NS2\*

Cust Item ID:

**Customer:**

**Reference:**

Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

280	Pick Kit	0.00
-----	----------	------

Pick Kit	0.00
----------	------

Memo 0.00

## Packaging

290	QC4- 100% Inspect kits for completeness	0.00
-----	-----------------------------------------	------

QC4- 100% Inspect kits for completeness	0.00
-----------------------------------------	------

	Memo	0.00
--	------	------

## Quality Control

300	Identify as per dwg & Stock Location:	0.00
-----	---------------------------------------	------

Identify as per dwg & Stock Location:\_\_\_\_\_ 0.00

### Packaging

<b>Memo</b>		0.00	
-------------	--	------	--

## Packaging

**Work Order ID 99948**

April-16-13 2:12:20 PM

**\*99948\***

Page 8

Item ID: D4680-041

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Skidtube Assembly

Start Date: 4/16/13 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 4/30/13 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
---------	--------	--------------	---------------	---------------	------------------	----------------

310

QC21- Final Inspection - Work Order Release

0.00

**\*310\***

QC

Memo

0.00

Quality Control

ME  
13-5-29

# Picklist Print

April-16-13 2:12:23 PM

Page 1

Work Order ID: 99948

\*99948\*

Parent Item: D4680-041

\*D4680-041\*

Parent Item Name: Skidtube Assembly

Start Date: 4/16/13

Required Date: 4/30/13

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 13.04.16 NEW ISSUE DD VERF:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2962-150

Manufactured No

Each 124.0000

**\*D2962-150\***

3.540 Outer Tube, Extrud

\*\*

SAD 13-05-15

Location

Loc Qty

Loc Code

HALL

124

59934

24

90871

100

D4681-041

Manufactured No

Each 0.0000

**\*D4681-041\***

Web Assembly

\*\*

D4686-1

Manufactured No

Each 0.0000

**\*D4686-1\***

Spacer

\*\*

D4753-1

Manufactured No

Each 0.0000

**\*D4753-1\***

Doubler

\*\*

AELS-1032-130

Purchased No

Each 0.0000

**\*AFI S-1032-130\***

INSERT

\*\*

10

20

3

# Picklist Print

April-16-13 2:12:24 PM

Page 2

Work Order ID: 99948

Parent Item: D4680-041

Parent Item Name: Skidtube Assembly

\*99948\*

\*D4680-041\*

Start Date: 4/16/13

Required Date: 4/30/13

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased

No

Each

1,241.000

3

**\*AN3C4A\***

\*\*

BOLT

Location

Loc Qty

Loc Code

FG

20

122814

20

ST512

1221

123759

1212

124221

7

124805

2

AN960-10L NAS1149F0332P Purchased

No

Each

1,618.000

5

**\*AN960-10I \***

\*\*

Washer

Location

Loc Qty

Loc Code

FP001

204

101340

204

ST504

1414

101340

1414

MS20601-AD4W3 Purchased

No

Each

2,251.000

40

**\*MS20601-AD4W3\***

\*\*

Rivet

Location

Loc Qty

Loc Code

ST311

651

114538

651

ST506

1600

124331

600

124365

1000

# Picklist Print

April-16-13 2:12:24 PM

Page 3

Work Order ID: 99948

Parent Item: D4680-041

Parent Item Name: Skidtube Assembly

\*99948\*

\*D4680-041\*

Start Date: 4/16/13

Required Date: 4/30/13

Start Qty: 1.00

Required Qty: 1.00

D2965

Manufactured No

Each 31.0000

\*D2965\*

Cap. 105 Skidtube

\*\*

21

## Location

## Loc Qty

## Loc Code

FP001

31

71371

2

80089

29

D3492-051

Manufactured No

Each 39.0000

\*D3492-051\*

Plug Assembly

\*\*

4

## Location

## Loc Qty

## Loc Code

FP001

39

55622

39

AN3C5A

Purchased No

Each 1,267.000

\*AN3C5A\*

Bolt

\*\*

2

## Location

## Loc Qty

## Loc Code

FG

5

122800

5

ST350

28

116419

28

ST512

1234

124221

1234

AN526C1032-10

Purchased No

Each 0.0000

\*AN526C1032-10\*

Screw

\*\*

2

400 D2965-3 QTY 1  
A.P. 13.05.22

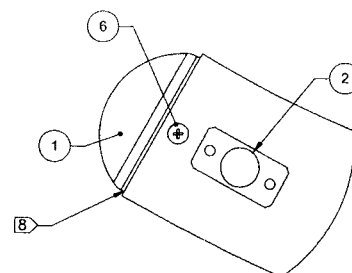
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Shop Packet Print

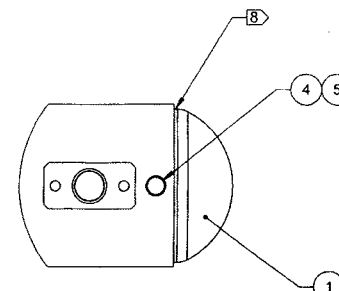
Page 3

ITEM	QTY	P/N	DESCRIPTION
	X	D4680-041	SKIDTUBE
1	2	D2965	CAP
2	4	D3492-051	PLUG ASSY
3	1	D4680-043	SKIDTUBE SUB ASSY
4	2	AN3C5A	BOLT
5	2	AN960-10L	WASHER
6	2	AN526C1032-10	SCREW

**RELEASED**  
2013-03-25  
*ml*

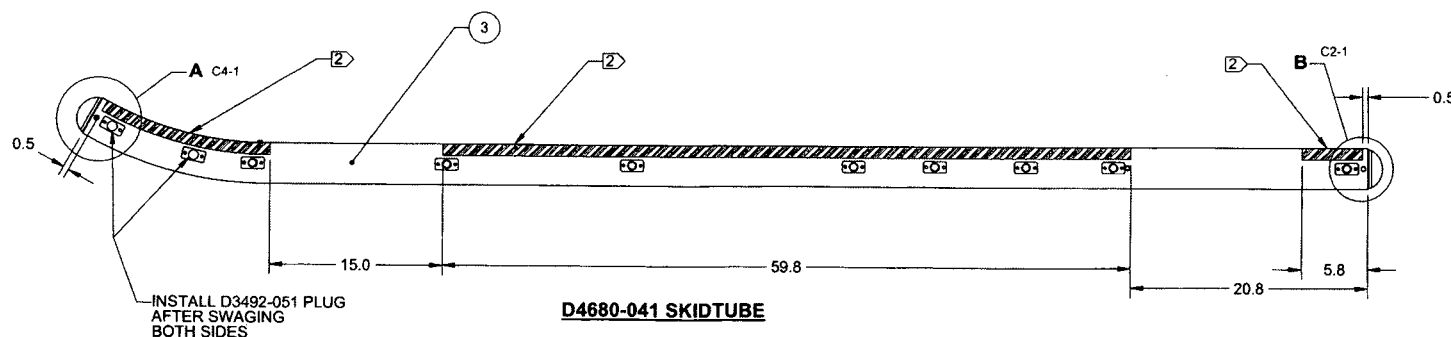


**DETAIL A** B7-1  
SCALE 4X



**DETAIL B** B2-1  
SCALE 4X

99948 MLO  
1304-16



**D4680-041 SKIDTUBE**

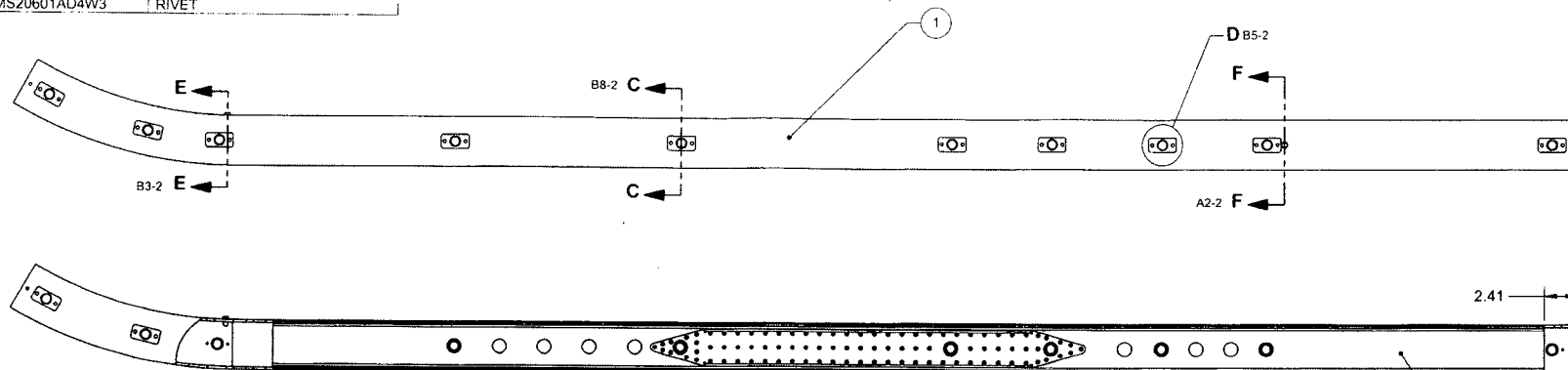
**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 1.00 ABOVE CENTERLINE PER QSI 005 4.4.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4680-041" AND B/N PER QSI 044 METHOD 6.4 ON INNER RADIUS OF SKIDTUBE BEFORE INSTALLING D2965 CAP.
- 7) WEIGHT: 18.64 lbs
- 8) SEAL FAYING SURFACES WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT.

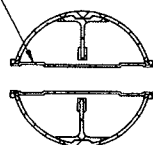
A	NEW ISSUE	AP	13.02.13
REV.	DESCRIPTION	BY	DATE
DESIGN	AP	<b>DART AEROSPACE USA, INC.</b> KENT, WA	
DRAWN	AP		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	<b>D4680</b>	SHEET 1 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	<b>SKIDTUBE</b>	NTS
DATE	13.02.13	<small>COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

99948

ITEM	QTY	P/N	DESCRIPTION
	X	D4680-043	SKIDTUBE
1	1	D4680-1	SKIDTUBE
2	1	D4681-041	WEB
3	10	D4686-1	SPACER
4	20	D4753-1	DOUBLER
5	3	AELS-1032-130	INSERT
6	3	AN3C4A	BOLT
7	3	AN960-10L	WASHER
8	40	MS20601AD4W3	RIVET

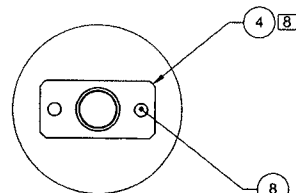


# D4680-043 SKIDTUBE SUB ASSY

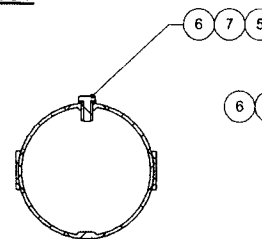


**SECTION C-C** C5-2 10  
10 PL  
SCALE 4X

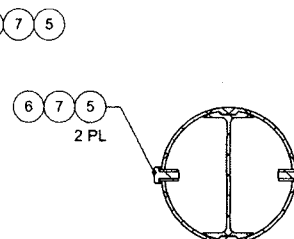
INSTALL D4686-1 SPACER AS FOLLOWS (10 PL)  
1. INSERT D4686-1 SPACER  
2. SWAGE TO Ø0.661X1.00 DEEP PER QSI 002  
3. TRIM/GRIND FLUSH PER QSI 002



**DETAIL D** C3-2  
20 PL (BOTH SIDES)  
SCALE 4X



**SECTION E-E** D7-2  
SCALE 2.5X



**SECTION F-F** C2-2  
SCALE 2.5X

## NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: APPLY SHERWIN WILLIAMS PRIMER (CM0483928) PER DART QSI 005 4.2.  
PAINT TWO COATS OF SHERWIN WILLIAMS (CM0143603GA) GLOSS WHITE PER DART QSI 005 4.2  
APPLY TWO COATS OF SHERWIN WILLIAMS CLEAR COAT (CM0571080) PER DART QSI 005 4.2.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 17.99 lbs
- 8) SEAL ALL FAYING SURFACES USING PROSEAL 890 B-2 (PRC).
- 9) INSERT D4681-041 WEB INTO D4680-1 SKIDTUBE IN LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX -241/-291 ADHESIVE PER DART QSI 015.
- 10) INSTALL D4686-1 SPACER AFTER INSTALLING D4753-1 DOUBLERS.

DESIGN	AP	<b>DART AEROSPACE USA, INC.</b> KENT, WA	
DRAWN	AP		
CHECKED	AP	DRAWING NO.	REV. A
MFG. APPR.	AP	D4680	SHEET 2 OF 3
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	SKIDTUBE	NTS
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RELEASED  
2013-03-25  
WIP

99948

